

AMENDMENTS

IN THE CLAIMS:

In compliance with 37 C.F.R. §1.121, Applicant presents a claim listing with amendments.

Claims 1-7: CANCEL

8. (NEW) A grid mounted with a thermal protection surface of a spacecraft, wherein the grid comprises a material that undergoes a detectable change in a property of the grid when the thermal protection surface is damaged, and wherein the grid comprises a material that ablates off the thermal protection surface upon re-entry of the spacecraft into the earth's atmosphere.
9. (NEW) The grid of claim 8, wherein the material is metallic wire, optical fiber, conductive paint, or any combination of these materials.
10. (NEW) The grid of claim 8, wherein the grid mounted with the thermal protection surface is mounted on the exterior of the thermal protection surface.
11. (NEW) The grid of claim 8, wherein the grid mounted with the thermal protection surface is mounted on a seal that fastens parts of the spacecraft.
12. (NEW) The grid of claim 8, wherein the spacecraft is a space shuttle.
13. (NEW) The grid of claim 8, wherein the detectable change in the property of the grid is detected by a multiplexer.

14. (NEW) The grid of claim 8, wherein the detectable change in the property of the grid is detected by a multiplexer and received by a detector or a processor.
15. (NEW) The grid of claim 8, further comprising a cockpit display that receives the detectable change in the property of the grid from the detector or processor.
16. (NEW) The grid of claim 8, further comprising a telemetry system that receives the detectable change in the property of the grid from the detector or processor.
17. (NEW) A system for detecting damage to a thermal protection surface of a spacecraft, the system comprising:
 - a). A grid mounted with the thermal protection surface;
 - b). An apparatus connected with the grid for detecting the change in the property of the grid; and
 - c). An analyzer connected with the apparatus for receiving and analyzing the change in the property of the grid.
18. (NEW) The system of claim 17, wherein the grid comprises a material that undergoes a detectable change in a property of the grid when the thermal protection surface is damaged.
19. (NEW) The system of claim 17, wherein the grid comprises a material that ablates upon re-entry of the spacecraft into the earth's atmosphere,
20. (NEW) The system of claim 18, wherein the material is metallic wire, optical fiber, conductive paint, or any combination of these materials.
21. (NEW) The system of claim 17, wherein the grid mounted with the thermal protection surface is mounted on the exterior of the thermal protection surface, embedded within

the thermal protection surface, or mounted beneath the thermal protection surface, or any combination of these positions.

22. (NEW) The system of claim 17, wherein the spacecraft is a space shuttle.
23. (NEW) The system of claim 17, wherein the apparatus for detecting the change in property of the grid is a multiplexer.
24. (NEW) The system of claim 17, wherein the analyzer is a detector or processor.
25. (NEW) The system of claim 17, further comprising a cockpit display that receives the detected change in the property of the grid from the apparatus that detects the change in property of the grid.
26. (NEW) The system of claim 17, further comprising a telemetry system that receives the detected change in the property of the grid from the apparatus that detects the change in property of the grid.